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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/722,659	09/27/1996	D. CLARK BENNETT	104385.140	4359

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EXAMINER	
VANDERVEGT, FRANCOIS P	

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	08/722,659	BENNETT ET AL.	
	Examiner	Art Unit	
	F. Pierre VanderVegt	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- *Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.*
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,18 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This application claims the benefit of the filing date of provisional application 60/004,622.

Claims 8-17 have been canceled.

Claims 1-7 and 18-19 are currently pending and are the subject of examination in the present Office Action.

1. In view of Applicant's response filed August 18, 2004, only the following ground of rejection is maintained.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-7, 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,997,863 to Zimmerman et al (of record).

It was previously stated: "The applied reference has a common assignee and some common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Following the board decision mailed November 24, 2003, Applicant has amended the claim to recite that the subject is a "human" rather than a "patient." The '863 patent teaches a method of treating ischemia in a rabbit hind limb ischemic model by administering heparinase I (see column 17, line 62 through column 18, line 34 in particular). The '863 patent also teaches that administering heparinase removes heparin and heparan sulfate from cell surfaces and from

the extracellular matrix, thereby facilitating the mobility of cytokines, chemoattractants and cells (see column 4, line 63 to column 5, line 19 in particular). The '863 patent teaches that the heparinase enzymes, including heparinase 3, are derived from *Flavobacterium heparinum* (column 6, lines 2-48 in particular) and the recombinant production of the enzymes (column 9, lines 37-64 in particular). The '863 patent teaches that heparin and heparan sulfate-degrading enzymes release chemokines (heparin binding growth factors) and heparan sulfate fragments from the extracellular matrix (column 6, lines 49-58 in particular). The '863 patent further teaches that wound healing is generally divided into three temporally overlapping phases: inflammation, proliferation and remodeling. During inflammation, blood borne cells infiltrate the wound site and release mediating factors (see column 2, lines 56-67 in particular). While the '863 patent exemplifies the treatment of a rabbit in a model study, there is a clear conception of the treatment of human subjects, as the '863 patent further teaches that compositions comprising one or more of the enzymes have potential utility for the treatment of humans (column 18, lines 26-29 in particular). The instant specification on page 39 discloses that ischemia induces inflammatory responses such as migration of neutrophils across the connective tissue, extravasation of plasma and other blood and cellular components. Therefore, the method of treating ischemia by administering heparinase taught by the '863 patent would also decrease the localized inflammatory responses that result from ischemia. Thus, the methods of the '863 patent anticipate the instantly claimed method of decreasing localized inflammatory responses.

The declarations under 37 CFR § 1.132 of Richard Broughton, Israel Vlodavsky and Elizabeth Cauchon filed January 26, 2004 have been fully considered in regard to the ground of rejection. The Broughton and Vlodavsky, who are co-inventors of the '863 patent but are not co-inventors of the present application, declarations establish that they did not contribute to the portions of the '863 patent that form the basis for the instant ground of rejection.

The declaration of Elizabeth Cauchon, who is named as a co-inventor of the present application but is not a co-inventor of the'863 patent, does not serve to clarify the inventorship of the claimed invention. Ms. Cauchon declares that she is a co-inventor of the present application. She further declares that she made no inventive contribution to the portions of the '863 patent that form the basis for the instant ground of rejection. Because the '863 patent constitutes an anticipatory reference for all of the instant claims, it is unclear what inventive contribution she made to the presently claimed invention, which appears to be solely the work of Clark Bennett and Pamela Danagher. Applicant is requested to clarify what contributions Elizabeth Cauchon made to the instantly claimed invention or to amend the inventorship of the present application accordingly."

Applicant's arguments filed August 18, 2004 have been fully considered but they are not persuasive.

Applicant's arguments and evidence filed August 18, 2004 have overcome the ground of rejection under 35 USC § 102(f). However, the rejection made under 35 USC § 102(e) is maintained. As previously established in prosecution and stated in the Board decision mailed November 24, 2003, the claimed method requires a single step, administration of heparinase in an "effective amount" to a patient (page 5, last paragraph of the decision). The instant claims have been amended to recite "human" instead of "patient" in an attempt to differentiate the subject of treatment instantly claimed from the subject treated in Example 8 of the '863 patent, a rabbit. However, the Board also found that the '863 patent "indicates the procedure used is a model and

that the procedure set forth in the example shows the potential utility of use in humans" (page 6, second paragraph of the decision). The Board also found that the amount of heparinase administered to a subject in the '863 patent could not be excluded as an "effective amount" to decrease neutrophil transmigration due to the paucity of guidance regarding an "effective amount" in the instant specification (paragraph bridging pages 7-8 of the decision).

As stated previously, Ms. Cauchon declares that she is a co-inventor of the present application in her declaration executed September 7, 2003. She further declares that she made no inventive contribution to the portions of the '863 patent that form the basis for the instant ground of rejection. Accordingly, Ms. Cauchon did not contribute to the invention of a single step method of administering heparinase in an effective amount to a subject.

Despite the fact that the work of co-inventor Cauchon ascertained that heparinase decreases neutrophil transmigration once administered in vivo, the fact remains that there is no difference between the step of the claimed method as practiced on a human subject and the step of the method set forth in Example 8 of the '863 patent as practiced on a non-human animal subject as a model for the treatment of a human. Ms. Cauchon has merely characterized a benefit of the active ingredient once it has been administered to the subject and "(i)t is a general rule that merely discovering and claiming a new benefit of an old process cannot render the process again patentable" (*In re* Woodruff, 919 F.2d 1575, 1577, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990)).

Conclusion

3. No claim is allowed.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Pierre VanderVegt whose telephone number is (571) 272-0852. The examiner can normally be reached on M-Th 6:30-4:00; Alternate Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

F. Pierre VanderVegt, Ph.D.
Patent Examiner
October 26, 2004

PATRICK J. NOLAN, PH.D.
PRIMARY EXAMINER
10/26/04